Space Weather Forecast

Issued on Tuesday, 09 November 2021 at 12:10 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: No significant activity.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar Activity has been Very Low over the past 24 hours, with occasional Background-class flare activity, mainly from a region in the northeast of the disc. This group showed growth during the start of this period before stalling, and is now a reasonably magnetically simple group. There are two other sunspot regions on the disc, one in the northwest and another in the southeast, both of which are now simple features. The sunspot group responsible for recent activity has now largely rotated off the visible disc. No Earth-directed Coronal Mass Ejections (CMEs) have been observed in available imagery.

Solar Wind / Geomagnetic Activity: The solar wind speed saw a slow overall decline from around 400 km/s to near 350 km/s. The Interplanetary Magnetic Field was weak, and the north-south component also varied weakly. The geomagnetic activity in this period was Quiet (Kp 1-2), with an Unsettled interval 08/2100-0000 UTC.

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is likely to be Low in the period, with a slight chance of Moderate-class flares - most likely from the region in the northeast of the solar disc.

Solar Wind / Geomagnetic Activity: No Earth-directed CMEs are expected, however up to two slow and weak CMEs could just give a weak glancing blow, most likely on Day 3 (11 Nov), but with minimal impacts expected. Solar wind speeds are now down to slow levels, and likely to stay that way through the next four days. Another coronal hole may possibly give a rise in wind speeds later on Day 4 (12 Nov), perhaps to around 500 km/s. However, any increase in wind speeds is low confidence.

Geomagnetic activity is expected to be Quiet to Unsettled, with a low risk of Active intervals on Days 3 and 4 due to possible weak CME influence and then possible interaction with faster winds from a coronal hole.

Energetic Particles / Solar Radiation: No solar radiation storms are expected.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	1	5	5
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	5	5	5	5
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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